Appliance Documentation

HC 1540/1541

(ECN 5026 vers. 137/237 from Index 10)

NoFrost fridge-freezer 30“ wide
(freezer compartment with pull-out drawer)

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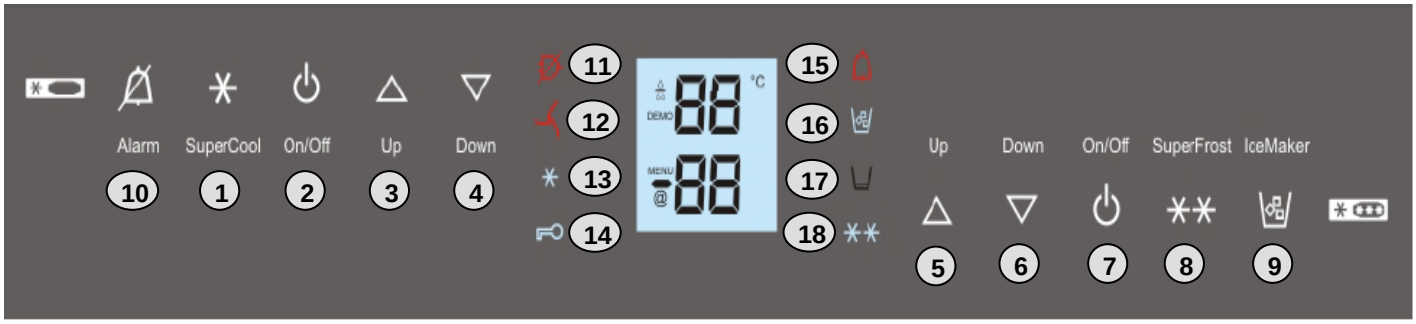
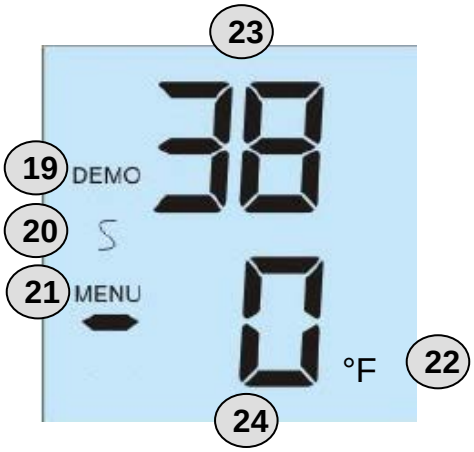
1.0 Operating and control elements





Control elements:

Refrigerator compartment			Freezer compartment		
1	**SuperCool**	SuperCool function	**5**	**Up**	**Setting button** temperature **higher**
2	**ON/OFF**	ON/OFF button for refrigerator compartment	**6**	**Down**	**Setting button** temperature **lower**
3	**Up**	**Setting button** temperature **higher**	**7**	**ON/OFF**	ON/OFF button for freezer compartment
4	**Down**	**Setting button** temperature **lower**	**8**	**SuperFrost**	SuperFrost function
			9	**IceMaker**	ON/OFF button for IceMaker
General					
10	**Alarm**	Alarm OFF button for audible alarm			

Control elements:

Front panel		MagicEye	
11	Power failure	**19**	Demo Mode activated
12	Clean dust filter (plinth)	**20**	Sabbath Mode activated
13	SuperCool activated	**21**	Customer menu activated
14	Child lock activated	**22**	Temperature display in °F
15	Alarm	**23**	Refrigerator compartment temperature
16	IceMaker switched ON	**24**	Freezer compartment temperature
17	Water tank empty		
18	SuperFrost activated		

2.0 Functions at a glance

Control:	Electronics	
Temperature display:	Refrigerator compartment: Freezer compartment:	Actual value Actual value
Temperature range:	Refrigerator compartment: Freezer compartment:	+36°F to +45°F (+2°C to +7°C) +6°F to -15°F (-14°C to -26°C)
Temperature alarm:	Refrigerator compartment: Freezer compartment:	Not present Visual, audible
Door alarm:	Refrigerator compartment: Freezer compartment:	Audible Audible
Fan:	Refrigerator compartment: Freezer compartment:	Present Present
Defrosting:	Refrigerator compartment: Freezer compartment:	Automatic Automatic
Interior light:	Refrigerator compartment: Freezer compartment:	Present Present
Service menu:	Present	
Compressor:	2x VCC	
Solenoid valve refrigeration circuit:	Not present	

3.0 Description of appliance

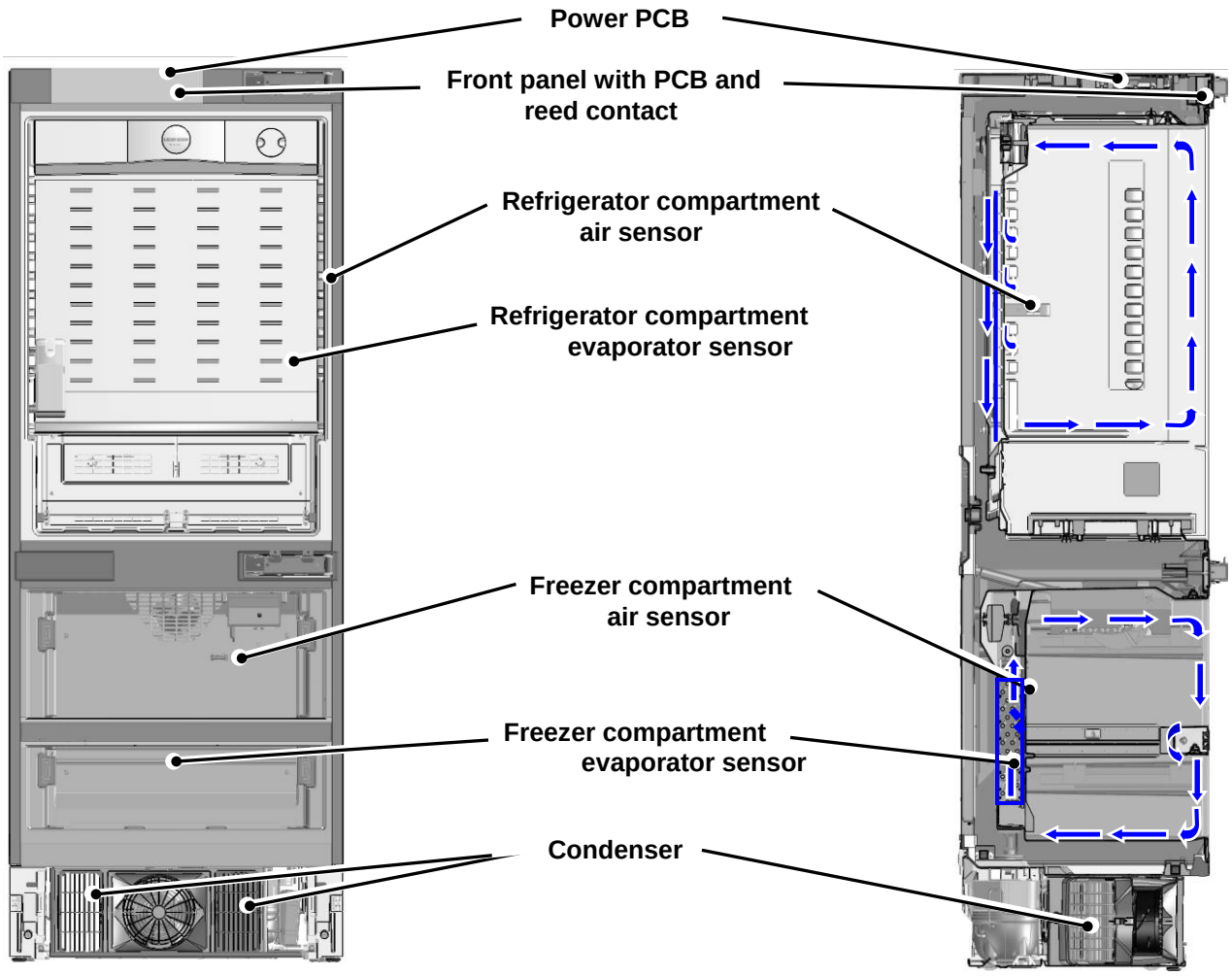
The HC 1540/1541 is a fridge-freezer with a NoFrost freezer compartment with IceMaker.

The refrigerator compartment is cooled via a freely suspended rear wall evaporator. The temperature is controlled by an air sensor and an evaporator sensor.

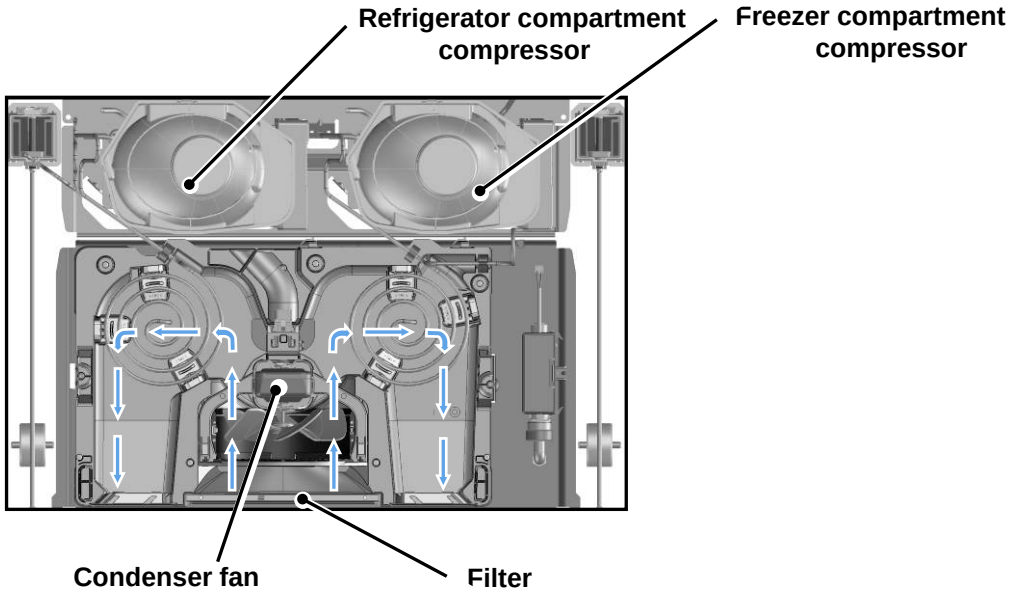
The temperature in the freezer compartment is controlled by an air sensor. The defrosting phases are initiated by way of the electronic control system, taking compressor running time and door openings into account.

The appliance has 2 speed-controlled compressors. The refrigerator compartment and freezer compartment thus have separate refrigeration circuits and can be controlled separately.

3.1 Sensor positions, schematic diagrams



3.2 Plinth layout



4.0 Main components and their functions

4.1 Electrical components and functions

4.1.1 General

Electronics	
Type:	Series 6 electronic control system
Components:	Control panel and power PCB
Compressor	
Type:	2 VCC compressors (frequency-controlled)
Function-refrigerator compartment:	ON: Refrigerator compartment evaporator sensor switch-on value. Note: On-delay time (8 minutes) must have elapsed. OFF: Refrigerator compartment air sensor switch-off value
Function-freezer compartment:	ON: Freezer compartment air sensor switch-on value Note: On-delay time (8 minutes) must have elapsed. OFF: Freezer compartment air sensor switch-off value
Function VCC:	• Compressor with various speed settings. • The compressor is triggered via an inverter, the inverter electronics are mounted directly on the compressor. • The speed settings and switching-off of the compressor are controlled by the inverter via an appropriate frequency signal (pulse-width modulated square wave voltage on a separate signal line). **Note:** In the event of the frequency signal being interrupted, the compressor continues to run at a pre-specified speed! • **Runtime longer than 70 minutes:** Speed increase by one step during compressor operation. • **Runtime shorter than 40 minutes:** Speed reduction on next start-up.
Condenser fan	
Position:	In the appliance plinth
Function:	ON: - refrigerator compartment compressor on **or** - freezer compartment compressor on. OFF: - refrigerator compartment compressor off **and** - freezer compartment compressor off

4.1.2 Refrigerator compartment

Electronics		
Setting range:	Refrigerator compartment:	+36°F to +45°F (+2°C to +7°C)
Display range:	+32°F to 99°F (actual value display) Temperatures colder or equal to 32°F are displayed as 32°F.	
Functions		
SuperCool:	ON:	refrigerator compartment is controlled at +36°F for 6 hours.
	OFF:	The refrigerator compartment adjusts itself to the set value.
Defrosting:	Automatic during compressor standstill phase.	
Door alarm:	When:	If door is open, after 180 seconds.
	Audible:	3 beeps.
Sensors		
Evaporator sensor:	Position:	In sensor holder on the back of the evaporator.
	Function:	- Switches the refrigerator compartment compressor ON. - Ends the defrosting phase.
Air sensor:	Position:	In the refrigerator compartment on the right side wall.
	Function:	- Switches the refrigerator compartment compressor OFF. - Generates the refrigerator compartment temperature display value.
Switch		
Door switch:	Position:	In front panel.
	Type:	Tube-type reed
	Contact type:	Make contact
	Function:	Activation via: magnet on the door, magnet is replaceable.
		Switching signal when:
		Door closed: Fan ON Interior light OFF
		Door open: Fan OFF Interior light ON Door alarm ON after 180 seconds
Loads		
Fan:	Position:	At the backside of the evaporator cover.
	Function:	Parallel to the compressor.
	Note:	After switching off the compressor, the fan runs for 30 minutes.
Interior light:	Position:	In the air duct at the ceiling of the fridge compartment
	Function:	- Shines as soon as the door is opened. - Is switched OFF after door has been open for 15 minutes.
Heating for hinge housing:	Position:	Glued and foamed-in on the back of the two bottom hinge housings (left and right).
	Function:	Can be activated when condensate collects.

4.1.3 Freezer compartment

Electronics		
Setting range:	+6°F to -15°F (-14°C to -26°C)	
Display range:	+32°F to -58°F (actual value display) values over +32°F are indicated on bar display.	
Functions		
Temperature alarm:	Alarm value:	4K warmer than set value.
	SuperFrost alarm value:	+14°F (-10°C)
	Delay:	60 minutes
	Visual:	Flashing temperature display.
	Audible:	4 beeps.
	During start-up:	The temperature display flashes until the switch-off value is reached, the audible alarm is switched OFF.
	After the defrosting phase begins, the temperature alarm is suppressed for 1.5 hrs.	
Defrosting:	ON:	- During start-up after 6 hours cumulative compressor running time. - After a cumulative compressor running time of 15 to 24 hours maximum, depending on the number/duration of the door openings. As the defrosting phase begins, the compressor and fan are switched OFF and the defrost heater is switched ON.
	Duration:	The defrost heater remains switched ON until such time as - the freezer compartment evaporator sensor has reached +41°F(+5°C) **or** - a max. defrosting time of 50 minutes has been reached.
	Info:	- After the end of the heating phase, the compressor is switched ON with a 10-minute delay. - If the SuperFrost function is activated during the defrosting phase, this will not interrupt defrosting.
Door alarm:	When:	If door is open, after 180 seconds.
	Audible:	3 beeps.
SuperFrost:	**SuperFrost ON:** Freezer compartment sets itself to -29°F (-34°C) for 30 hours. In the following 35 hours SuperFrost is ended automatically after the temperature falls 8K below the set value (at 0°F -> 8°F) or on expiry of the total period of 65 hours. **SuperFrost OFF:** The freezer compartment sets itself to the set value. **Attention:** If SuperFrost is actuated during a defrosting phase, the SuperFrost function is not performed before the defrosting phase has finished its cycle..	

Sensors

Air sensor:

Position: On the front of the evaporator cover

Function:
- Switches the freezer compartment compressor on and off.
- Freezer compartment evaporator sensor and freezer Compartment air sensor switch the freezer compartment fan ON.
- Generates the freezer compartment temperature display value.

Evaporator sensor:

Position: Slipped in, in the lower area of the lamellar evaporator.

Function:
- Freezer compartment evaporator sensor and freezer compartment air sensor switch the freezer compartment fan ON.
- Ends the defrosting phase.

Switch

Door/Drawer switch:

Position: In the bar between the two drawers.

Type: 2x reed PCB

Contact type: Make contact

Function: Activation via:
magnet foamed in on the top door interior on bottom left or the bottom door interior on top left.
Magnet is not replaceable.

Switching signal when:

Door closed:	Fan	ON
	Interior light	OFF
Door open**:**	Fan	OFF
	Interior light	ON
	Door alarm	ON after 180 seconds

Loads

Fan:

Position: Top centre of freezer compartment.

Function: ON:
- Compressor on and
- Freezer compartment door closed and
- Evaporator and air sensor switch-on value reached.

Switch-on value evaporator sensor:
a) During start-up / after defrosting phase: 0°F (-18°C).
b) During normal operation 2K colder than freezer compartment air sensor.

OFF**:** - Compressor OFF

Defrost heater:

Position: Clipped into lamellar evaporator.

Function: Defrosts the evaporator.
For activation, see: Functions Defrosting

Interior light:

Position: Below the cross connector and the bar.

Function:
- Shines as soon as the door is opened.
- Is switched OFF after door has been open for 15 minutes.

4.2 Refrigeration components and functions

4.2.1 General

Compressor	
Compressor:	2 x VCC (frequency-controlled)
Refrigerant:	R134a

4.2.2 Refrigerator compartment

Evaporator	
Type:	Rear wall evaporator
Type of installation:	Suspended freely.
Injection point:	At the top left

4.2.3 Freezer compartment

Evaporator	
Type:	Lamellar evaporator
Type of installation:	Upright between air duct panel and inner liner.
Injection point:	Top centre

5.0 Assembly instructions / replacement of parts

5.1 General

5.1.1 Control panel electronics

Covers: - Disengage the covers at the marked locations.
- Unclip the front panel at the left and right.

Fig. 5.1.1/ 1

Fig. 5.1.1/ 2

Front panel with PCB: - Disengage and remove bus connector.

Note: Front panel is only available in its entirety as a spare part, i.e. the PCB and tube-type reed are not available separately!

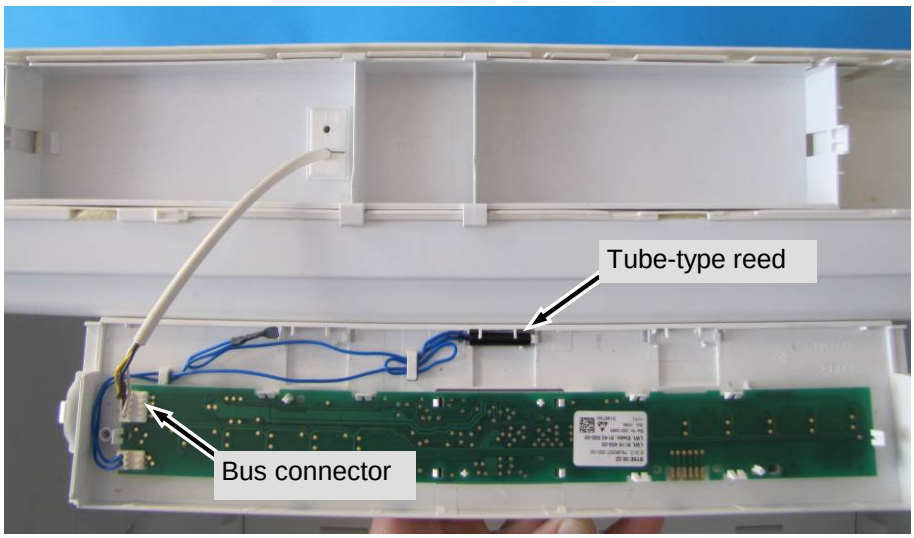


Fig. 5.1.1/ 3

5.1.2 Power electronics

Cover: - remove fastening screw.
- lift up cover at the rear and pull backwards.

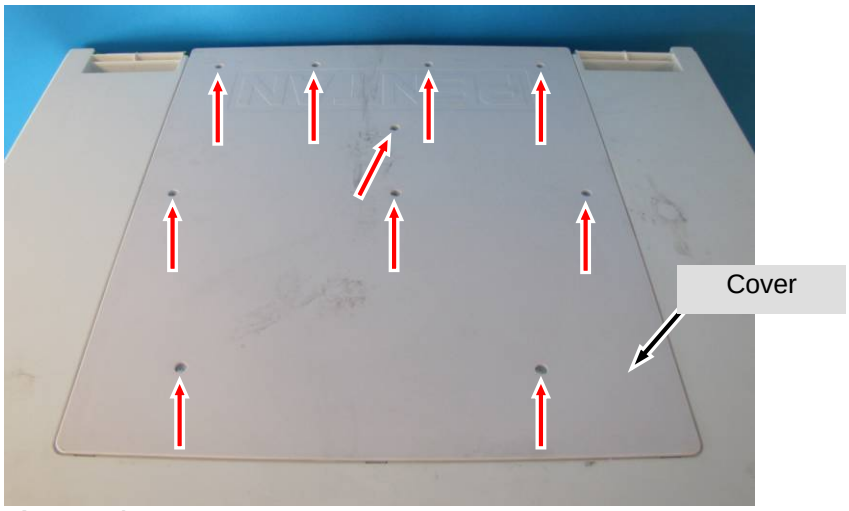


Fig. 5.1.2/ 1

PCB carrier: - Disconnect all cables from the power PCB.
- remove the entire PCB carrier from the appliance ceiling.

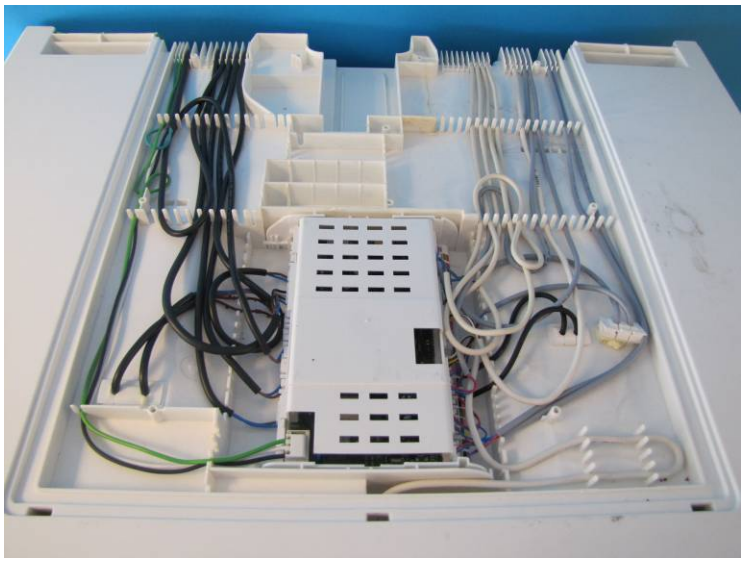


Fig. 5.1.2/ 2

Power PCB: - Unclip and remove the cover of the PCB carrier.
- Disengage the PCB at the marked locations.

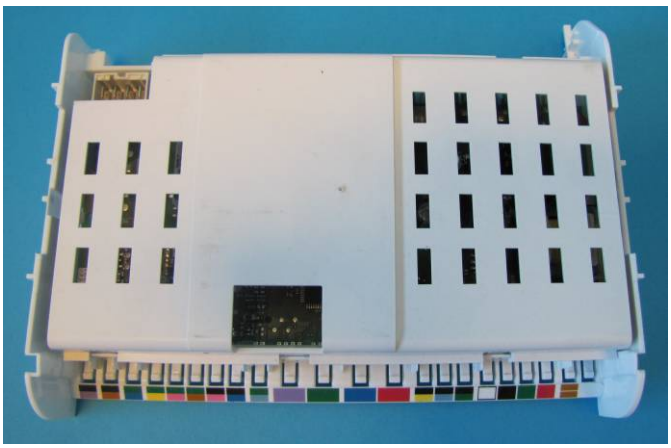


Fig. 5.1.2/ 3

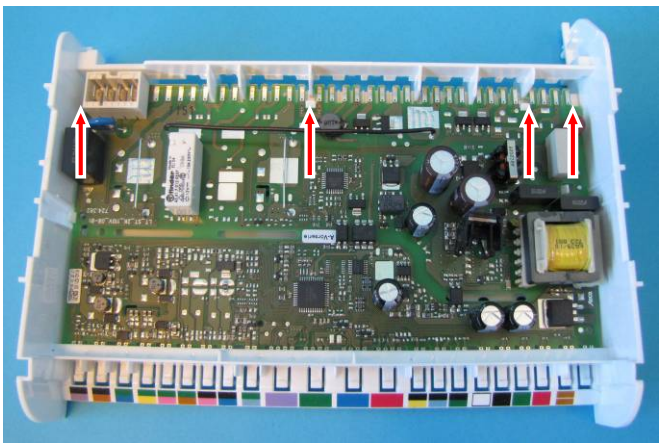


Fig. 5.1.2/ 4

5.1.3 Condenser fan

Fan mount:
- Remove the ventilation grille and dust filter.
- Press down the locating lugs of the mount at the same time and remove the mount from the funnel along with the motor.
- Electrical connection is by means of a rigid plug-in connector.

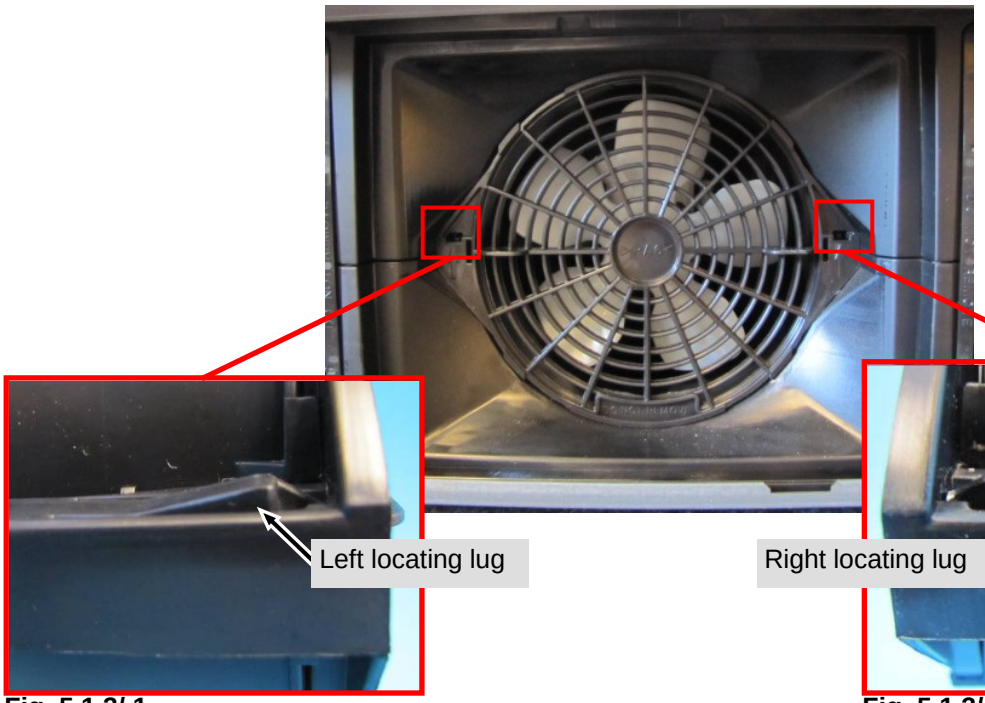


Fig. 5.1.3/ 1

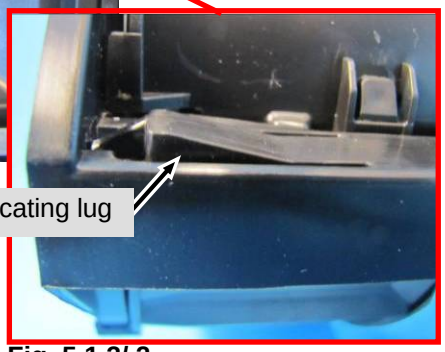


Fig. 5.1.3/ 2

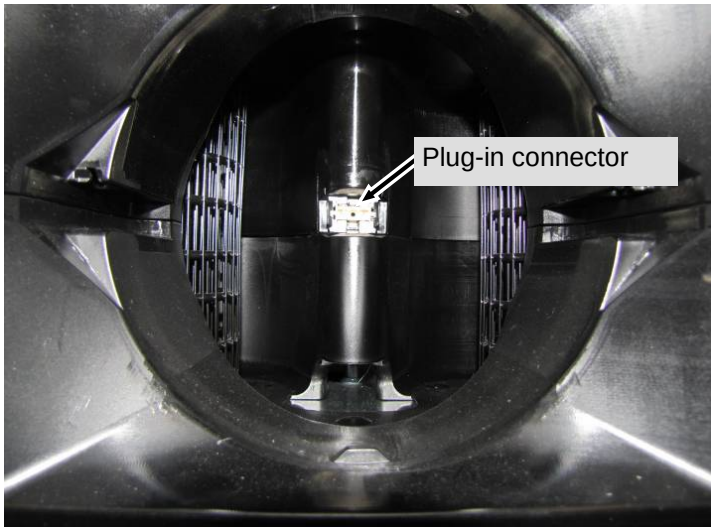


Fig. 5.1.3/ 3

Fan mount:

- unclip outer housing
- strip the blades off the spindle.
- remove fan motor from the mount. Please take care that the spring struts do not break!

Fig. 5.1.3/ 4

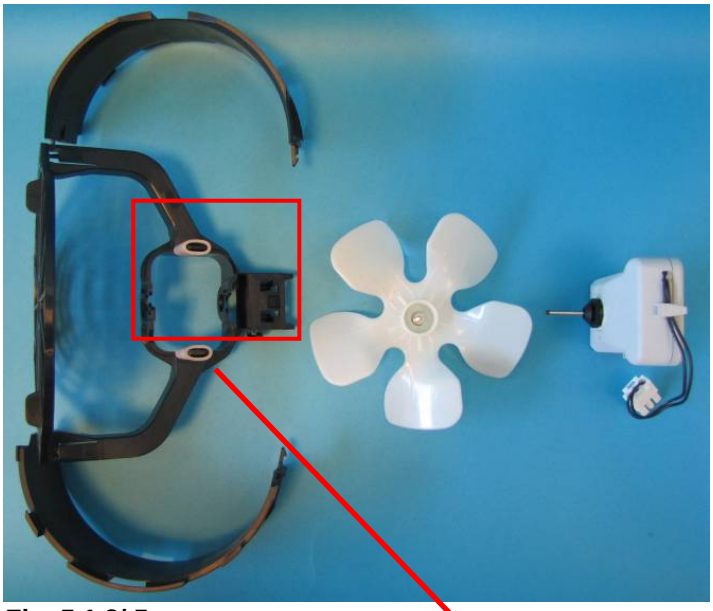


Fig. 5.1.3/ 5

Fig. 5.1.3/ 6

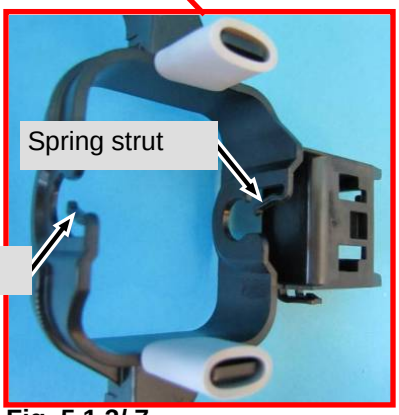


Fig. 5.1.3/ 7

5.2 Refrigerator compartment

5.2.1 Door replacement

CAUTION: To avoid injury to fingers or hands, both hinges must be loosened before replacing the door.
Turn the screw in a clockwise direction (by approx. 8 turns) until it is in the 0-position.

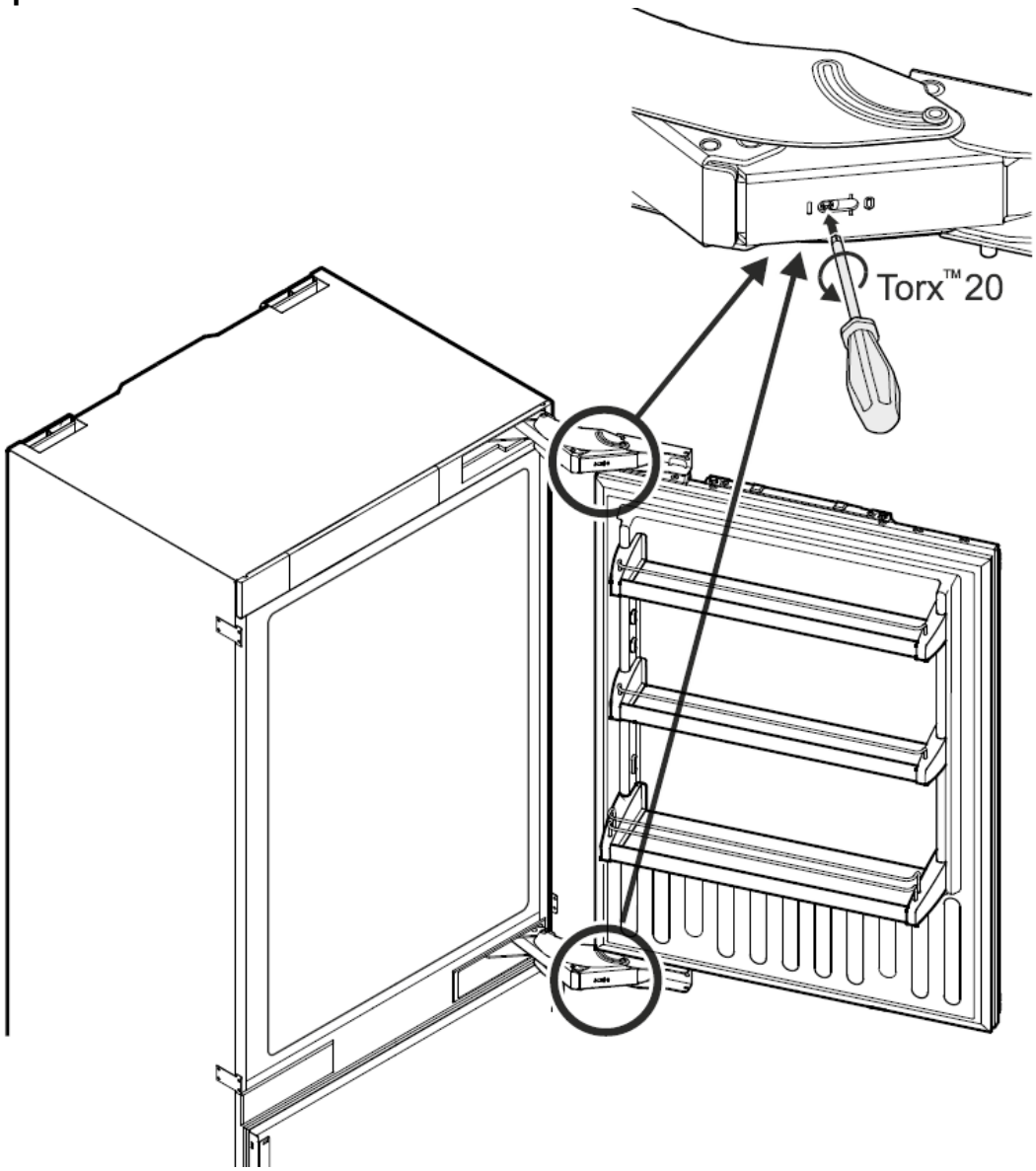


Fig. 5.2.1/ 1

Fig. 5.2.1/ 2

Disassembling the door

- Remove the fastening screws and take off the door.

Note: When closed, the door is held to a certain extent by the effect of the magnet door seal. Support the door for safety or hold while removing the screws.

- The hinges must be re-tightened as soon as the new door is mounted.

Fig. 5.2.1/ 3

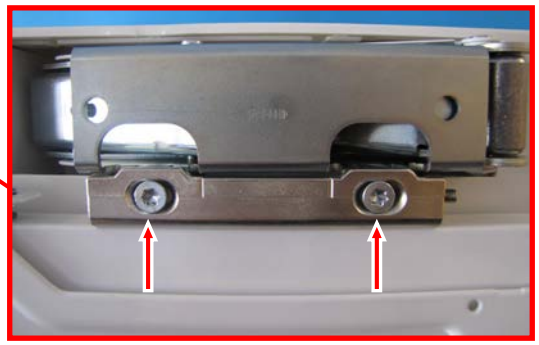


Fig. 5.2.1/ 4

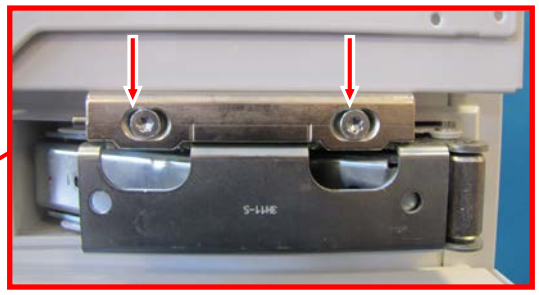


Fig. 5.2.1/ 5

Adjust door:

- Slightly loosen fastening screws.
- With the help of the set screw on the respective mounting bracket the door can be adjusted in relation to the hinge and thus the appliance body.
- Retighten the fastening screws afterwards.

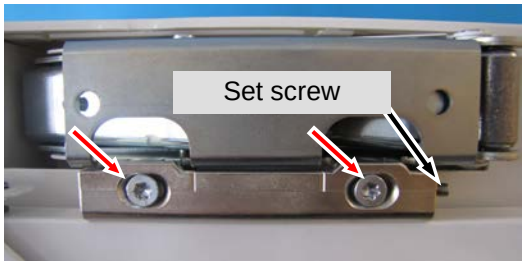


Fig. 5.2.1/ 6

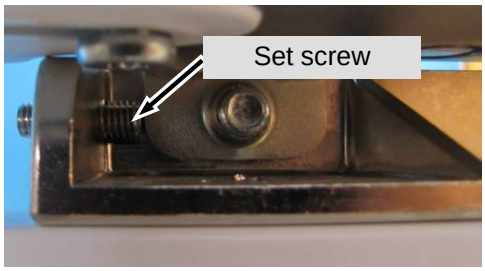


Fig. 5.2.1/ 7

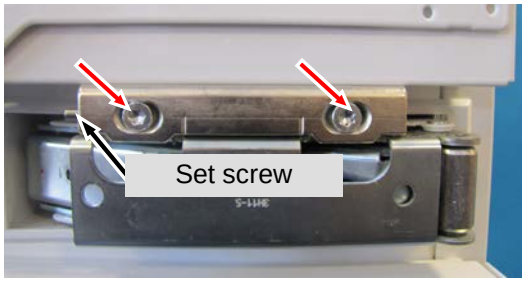


Fig. 5.2.1/ 8

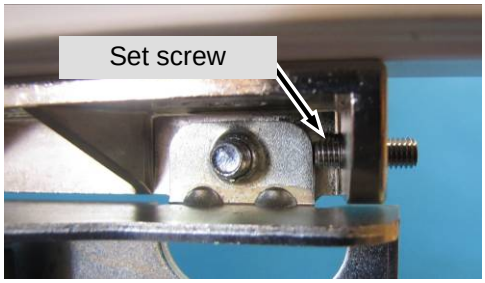
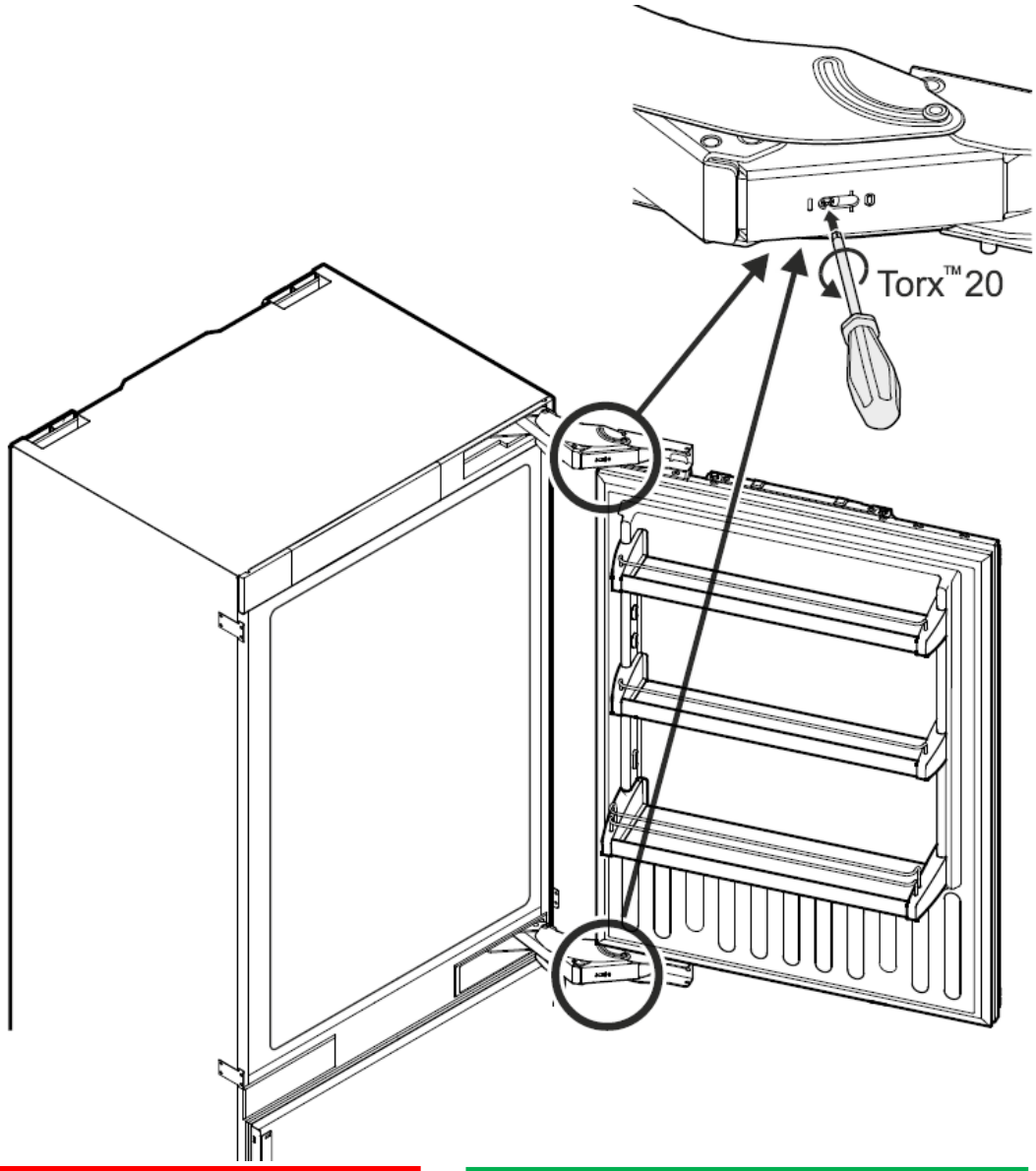


Fig. 5.2.1/ 9

5.2.2 Hinge replacement

CAUTION: To avoid injury to fingers or hands, both hinges must be loosened before replacing the door.
Turn the screw in a clockwise direction (by approx. 8 turns) until it is in the 0-position.



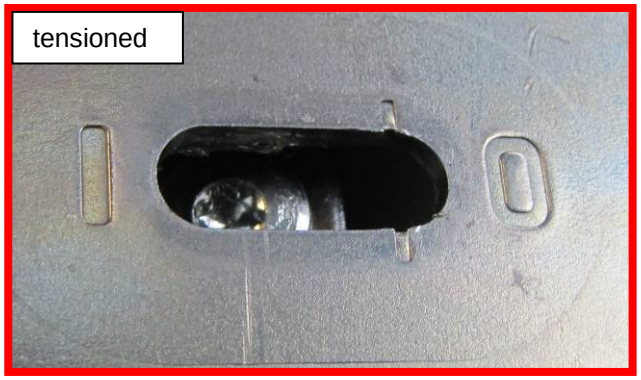


Fig. 5.2.2/ 1

Fig. 5.2.2 / 2

Hinge: Remove fastening screws and hinge. On the outside, the hinge is hooked into the housing with two lugs.

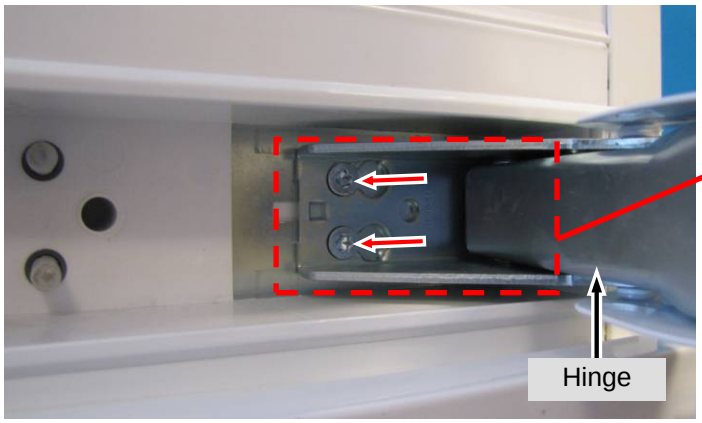


Fig. 5.2.2/ 3

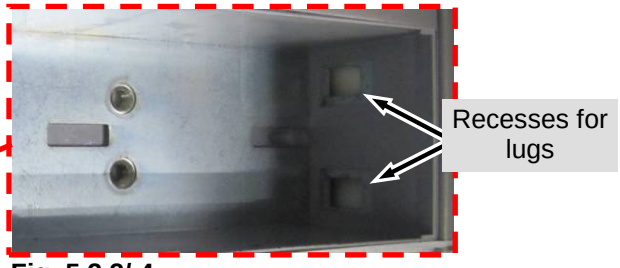


Fig. 5.2.2/ 4

Fig. 5.2.2/ 5

Tighten hinge: To achieve the correct closing force, once the new hinge and door are mounted, the new hinge must be tightened.

Note: Turn tensioning screw fully – not just until screw head is in I-position.

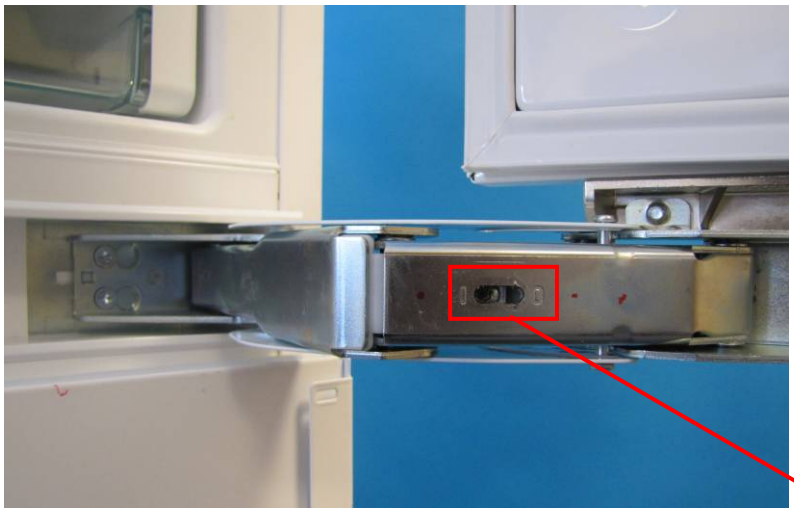


Fig. 5.2.2/ 6

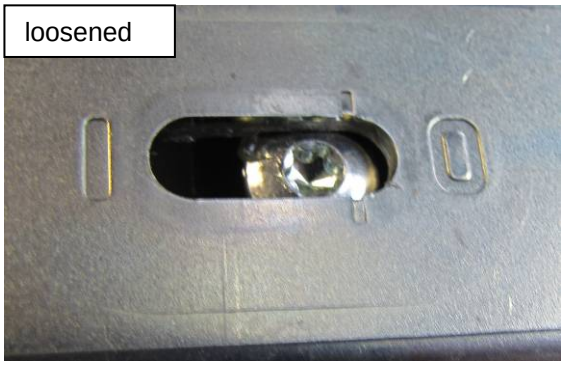


Fig. 5.2.2/ 7

Fig. 5.2.2/ 8

5.2.3 Soft-close mechanism replacement

To prevent the door from slamming shut, two soft-close mechanisms are installed in each hinge housing. They are inserted in the recesses and can also be pulled out again.

Fig. 5.2.3/ 1

Fig. 5.2.3/ 2

5.2.4 Heating of hinge housing

To prevent condensation forming on the inside of the lower hinge housings, they are heated using a foamed-in heating system. Heating activation is described in chapter 7.0.

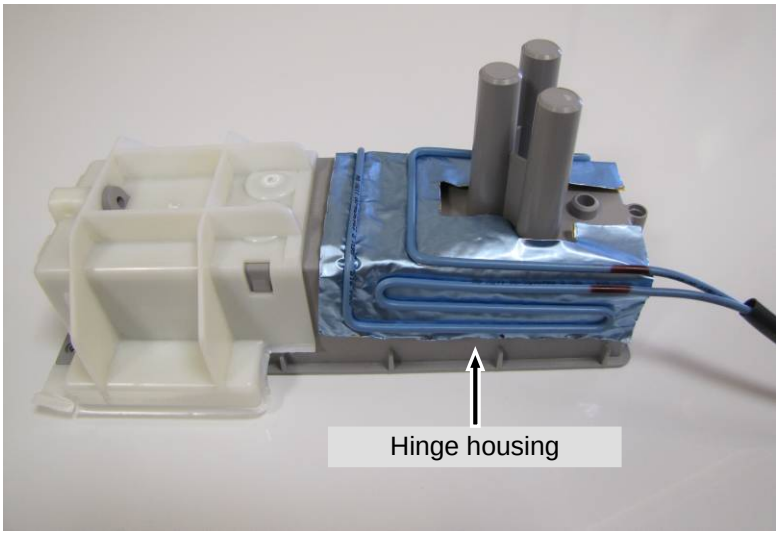


Fig. 5.2.4/ 1

5.2.5 Dismantling the refrigerator compartment evaporator cover

Light cover: - Remove fastening screws and take off light cover.
- Disconnect cable.

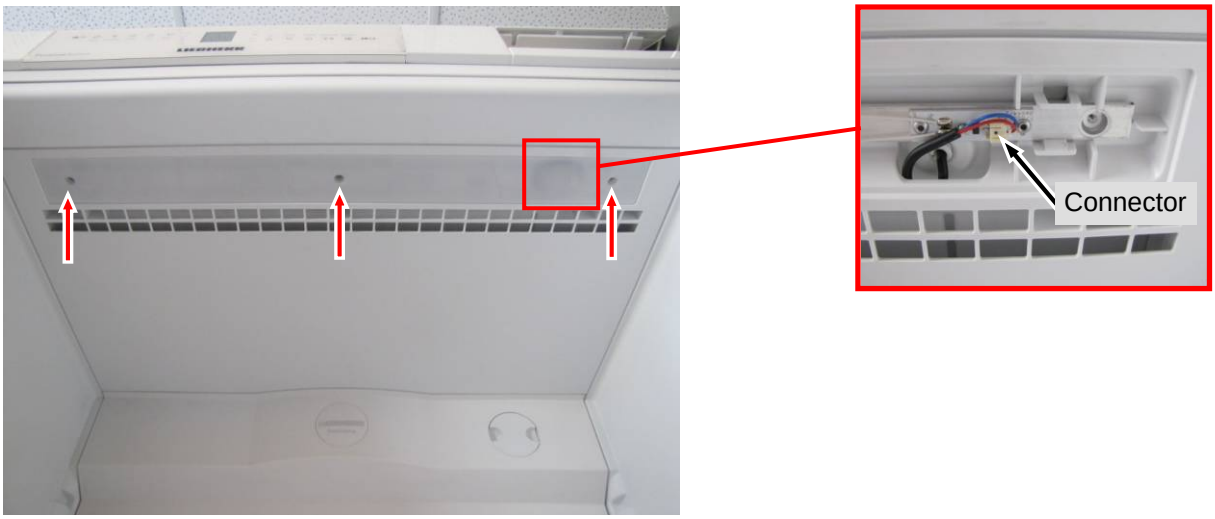


Fig. 5.2.5 / 1

Top air duct: - Remove fastening screws and withdraw air duct´.

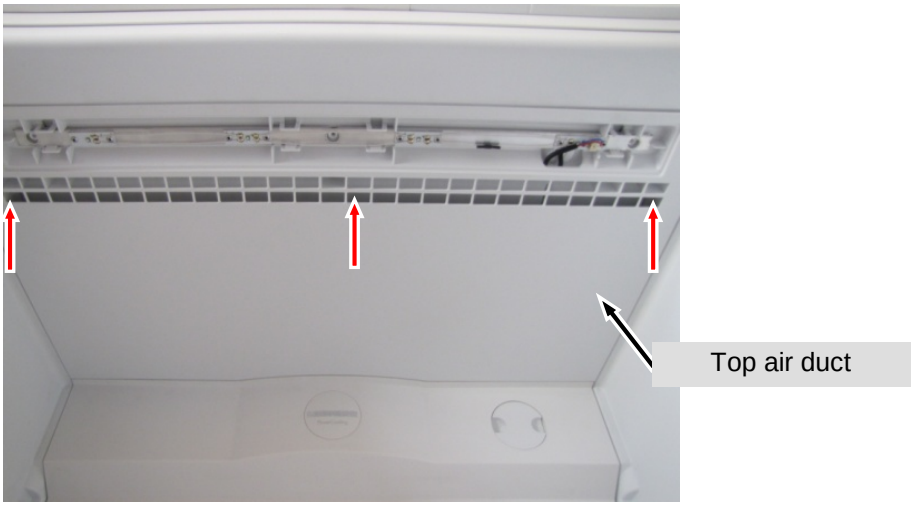


Fig. 5.2.5 / 2

Bottom air duct: - Remove fastening screws and take off bottom cover.

Fig. 5.2.5 / 3

Evaporator cover:

- Remove fastening screws, side retaining clips and bayonet screw.
- Disconnect fan cable.
- Pull forward bottom left corner of the cover slightly so that it slips out of the recess in the compartment liner in the area of the fan.
- Then swivel forward the entire left side and remove the cover.

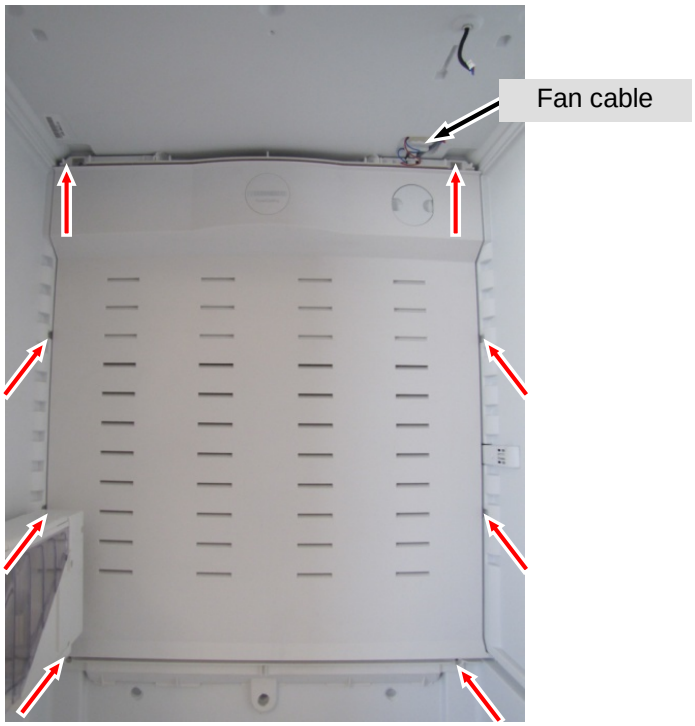


Fig. 5.2.5 / 4

5.2.6 Refrigerator compartment air sensor

Air sensor:

- Remove plugs and fastening screw from the sensor mount.
- Pull out the air sensor through the back of the housing feedthrough and replace using the repair kit .

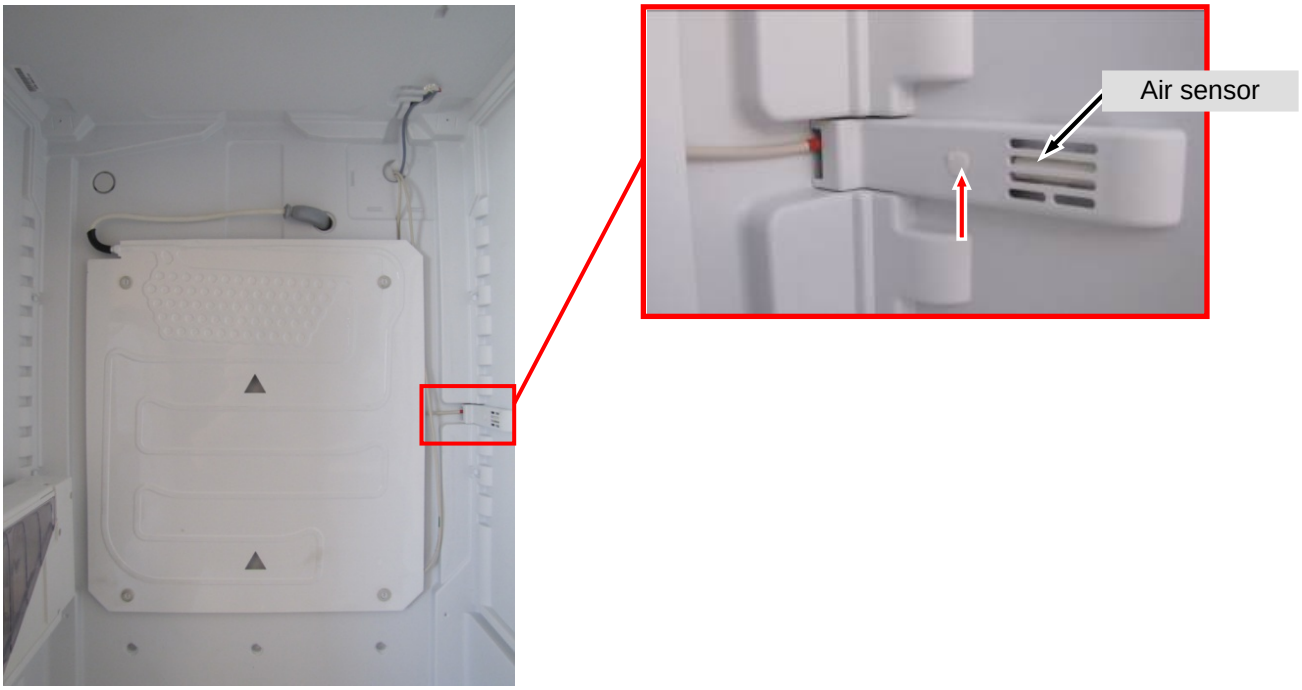


Fig. 5.2.6/ 1

5.2.7 Refrigerator compartment evaporator sensor

Evaporator sensor:

- Loosen 4 bayonet screws.
- Swing the evaporator to the left. Pull the sensor out of the mount.
- Pull out the evaporator sensor through the back of the appliance feedthrough and replace using the repair kit. The repair instructions accompany the repair kit.

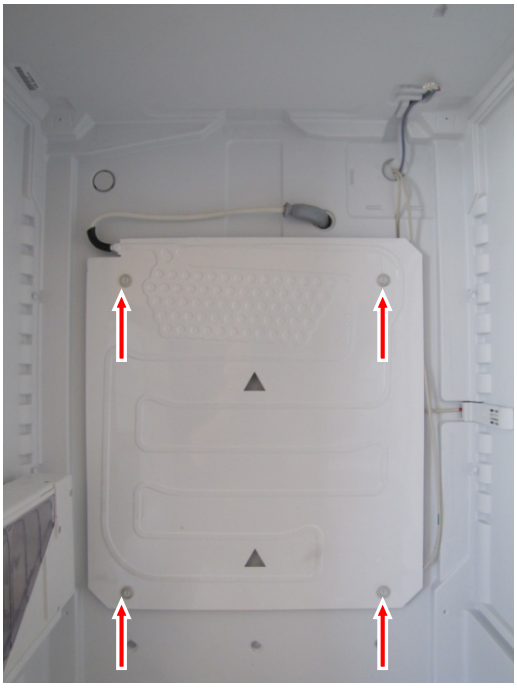


Fig. 5.2.7/ 1

Fig. 5.2.7 / 2

5.2.8 Refrigerator compartment fan

Refrigerator compartment fan:

- Unclip absorber ring along with fan.
- Pull fan out of the absorber ring.

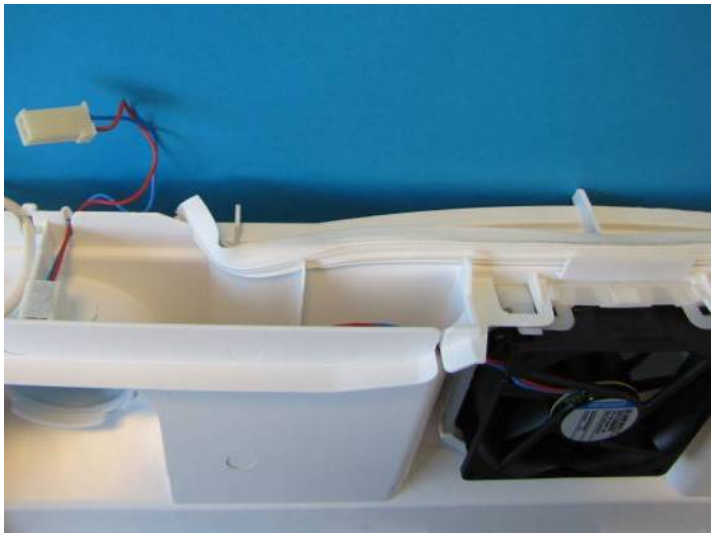


Fig. 5.2.8/ 1

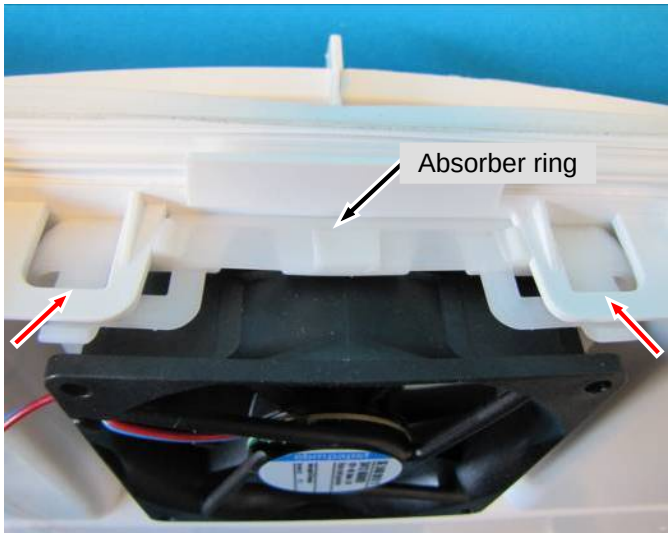


Fig. 5.2.8/ 2

5.2.9 Water pump for IceMaker

Base: - Remove fastening screws and twist up base.
- Remove screws on the back.

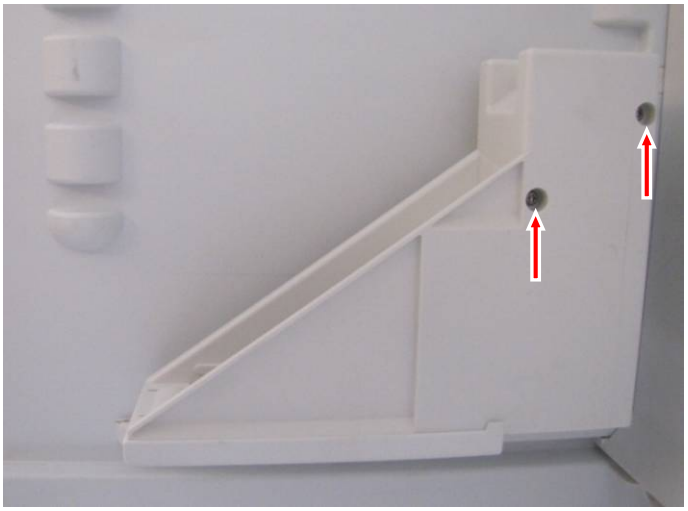


Fig. 5.2.9/ 1

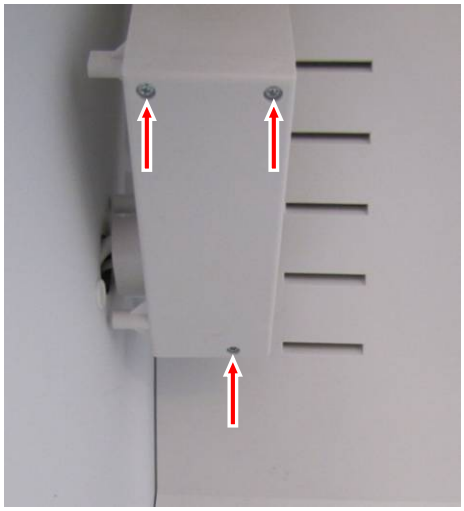


Fig. 5.2.9/ 2

Pump: - Raise cover and disconnect water hose. Remove cover.
- Disconnect cable for pump and reed contact.
- Remove base and withdraw pump.

Fig. 5.2.9/ 3

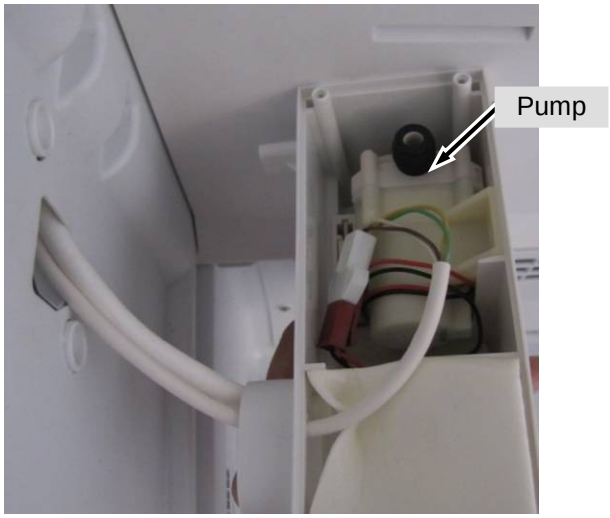
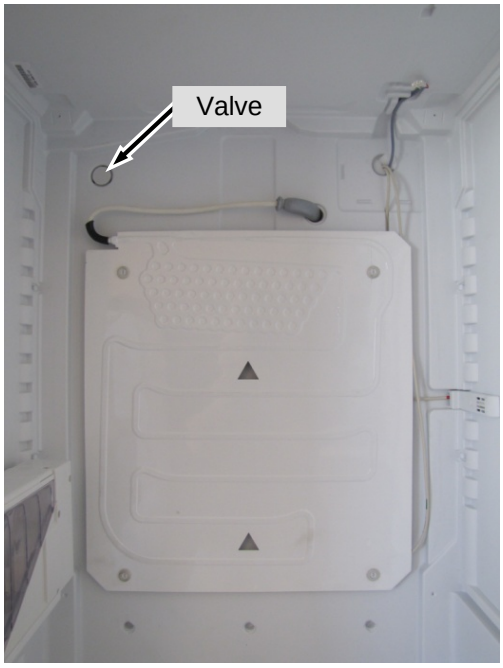


Fig. 5.2.9/ 4

5.2.10 Pressure compensating valve

Valve: - Pull out valve and remove lip.



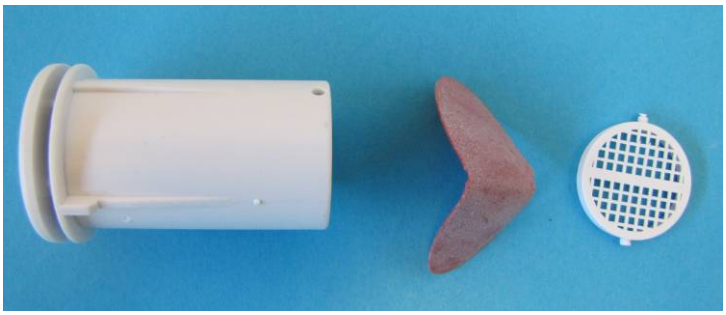


Fig. 5.2.10 / 1

5.3 Freezer compartment

5.3.1 Dismantling the freezer compartment drawers

Remove insert:

- Lift insert by approx. 2 cm at the front and then push back to unclip it at the rear.
- Lift the insert up and out of the drawer.

Fig. 5.3.1/ 1

Remove drawer:

- Remove fastening screws on the left and right rails.
- Unclip rails from the rear locking pins and remove the drawer.
- Please note position of the adjusting aids at the front (important for assembly).

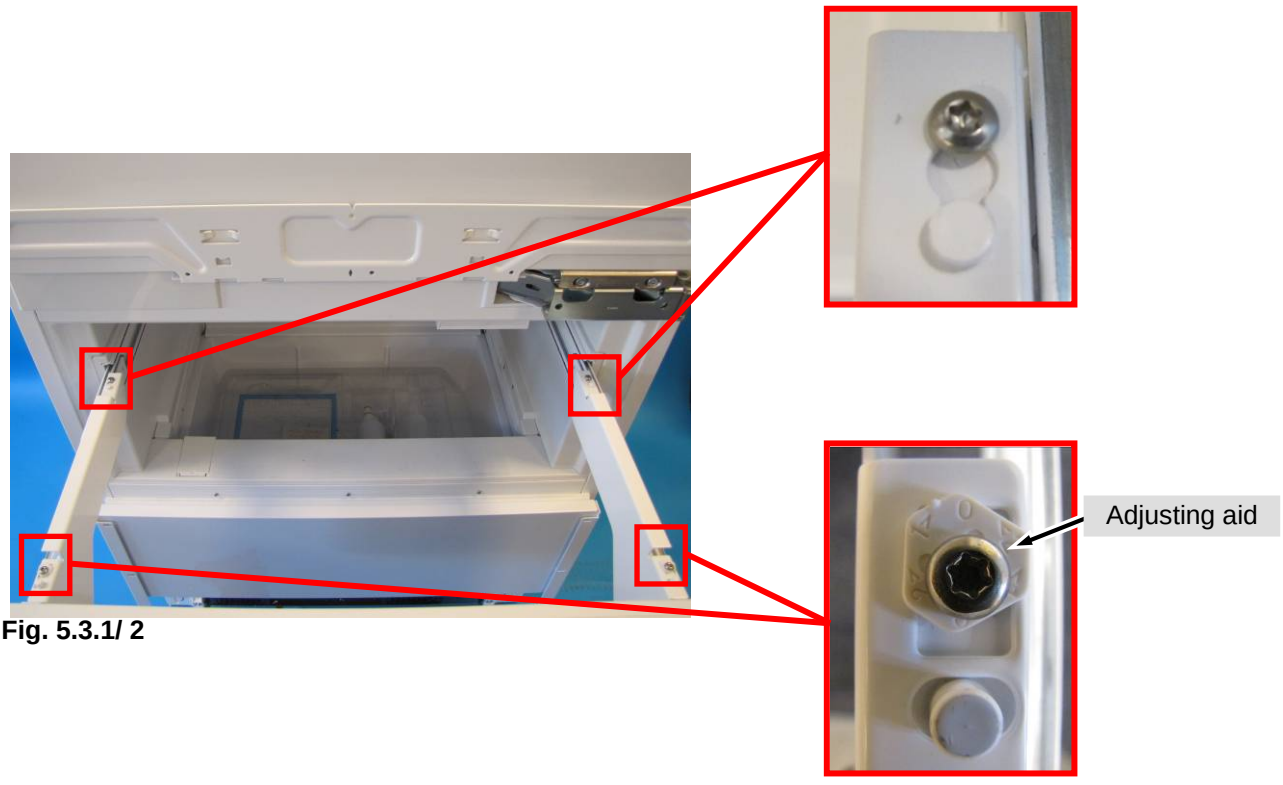


Fig. 5.3.1/ 2

Horizontal adjustment option:

- When assembling the drawers it must be ensured that the plastic shims under the front screws are properly mounted again.
- They permit the horizontal adjustment of the drawers so that the outer edges are flush with the outer edges of the refrigerator compartment doors.
- From the basic position (0) both drawers can be offset by 1mm or 2 mm respectively to the left or right. As an aid, the numbers and direction arrow are embossed on the shims

Drawer offset to the left by 2mm:

Fig. 5.3.1/ 3

Neutral position:

Fig. 5.3.1/ 4

Drawer offset by 2mm to the right:

Fig. 5.3.1/ 5

5.3.2 Evaporator cover

IceMaker: - Press up the locating lugs of the IceMaker and draw the IceMaker forwards.
- Disconnect cables.

Fig. 5.3.2/ 1

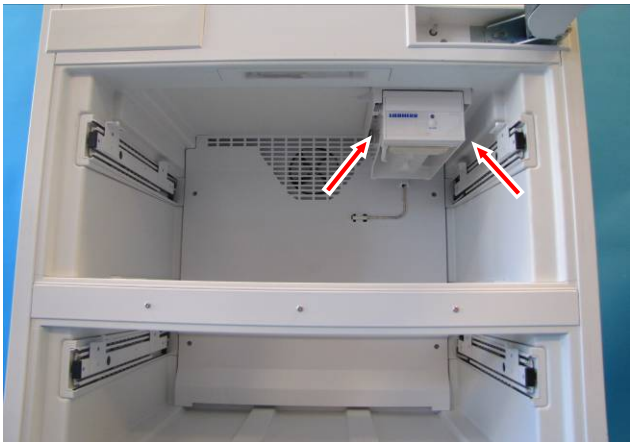


Fig. 5.3.2/ 2

Cover: - Unclip the air sensor and remove the four screws.
- Draw the cover forwards and swing it out at the bottom.

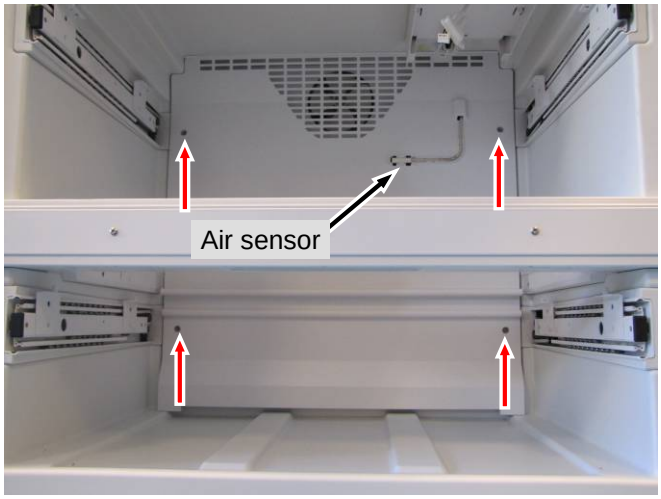


Fig. 5.3.2/ 3

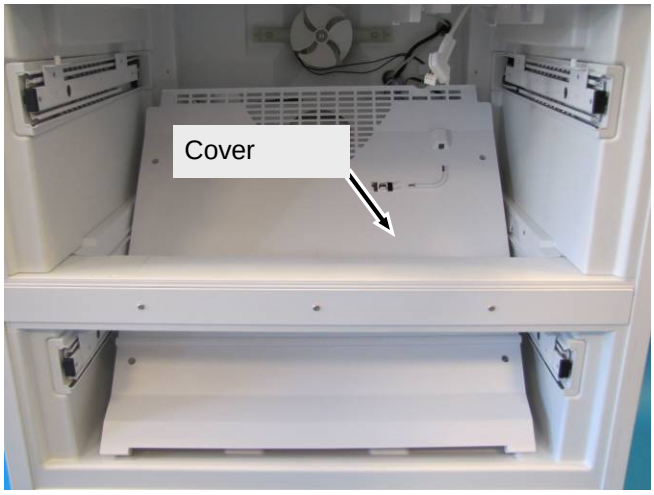


Fig. 5.3.2/ 4

5.3.3 Air sensor

Air sensor:

- Undo the strain relief for the cable feed-through at the back of the appliance and pull the sensor out of the appliance at the back.
- Mount the new sensor using the repair kit.

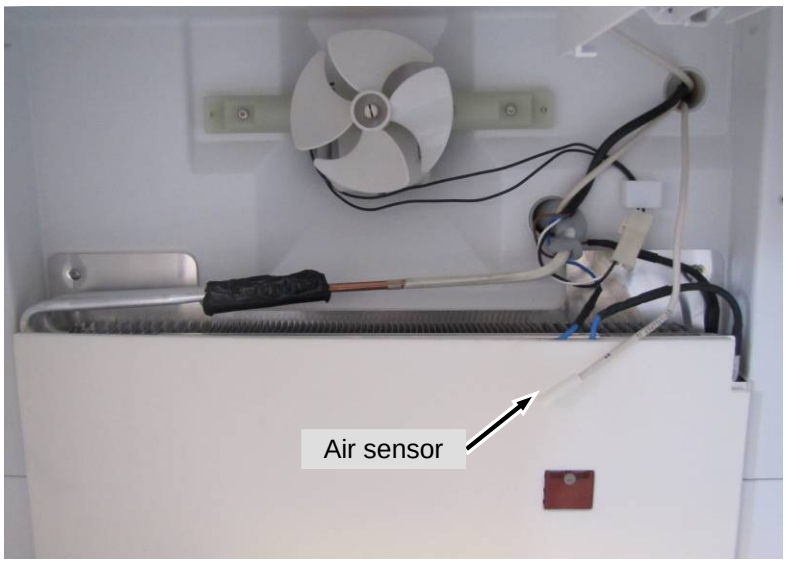


Fig. 5.3.3/ 1

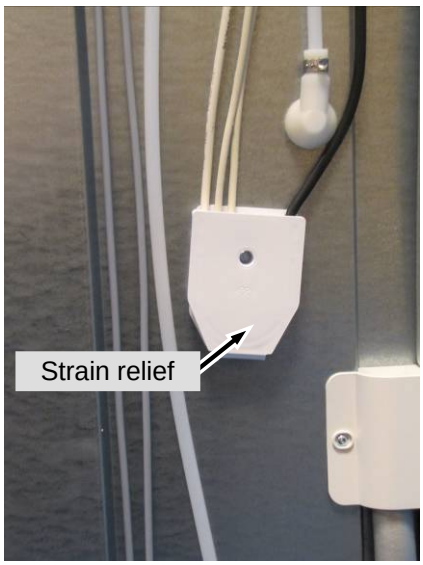


Fig. 5.3.3/ 2

Temperature limiter:

- Unscrew the temperature limiter.
- Cut into film to expose cable.
- The new temperature limiter is put together using the repair kit.

Fig. 5.3.3/ 3

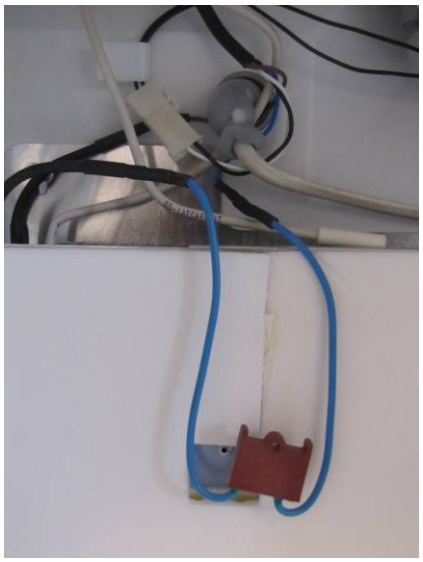


Fig. 5.3.3/ 4

5.3.4 Evaporator sensor

Evaporator sensor:
- Raise evaporator module and swing it out in a forward direction.
- Make incisions in the sheeting at the marked locations (see **Fig. 5.3.4/ 1** and **Fig. 5.3.4/ 2**).
- Bend or pull open the retaining lugs of the cover plate and remove it.
- Draw the evaporator sensor to the left, out of the lamellar evaporator.
- Undo the strain relief for the cable feed-through at the back of the appliance and pull the sensor out of the appliance at the back.
- Mount the new sensor using the repair kit.

Defrost heater: Is clipped into the evaporator fins. Can be replaced if defective.

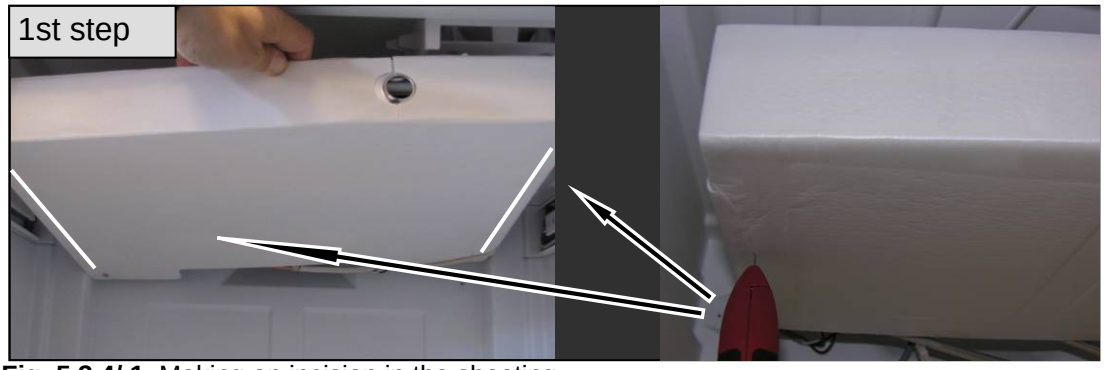


Fig. 5.3.4/ 1 Making an incision in the sheeting

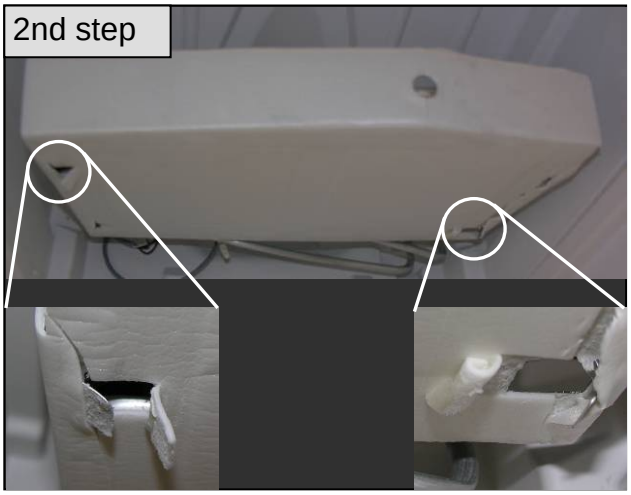


Fig. 5.3.4/ 2 Cutting open the evaporator cover

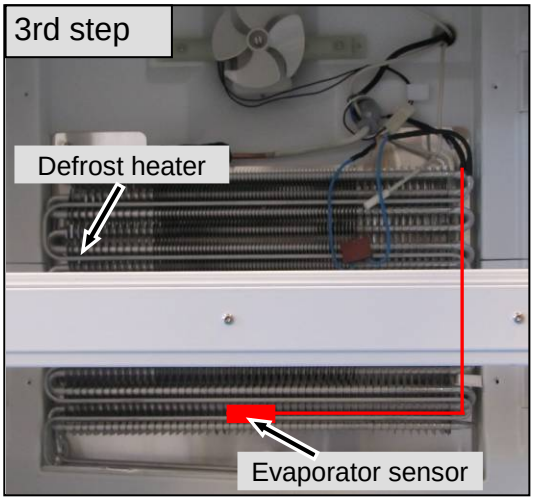


Fig. 5.3.4/ 3 Lamellar evaporator

5.3.5 Fan

Freezer compartment fan: - Disconnect fan cable.
- Remove the fastening screws and detach the fan together with the mount.
- Remove the blades and strip off the rubber rings.
- Disengage the locating lugs and remove the bracket of the mount.

Fig. 5.3.5/ 1

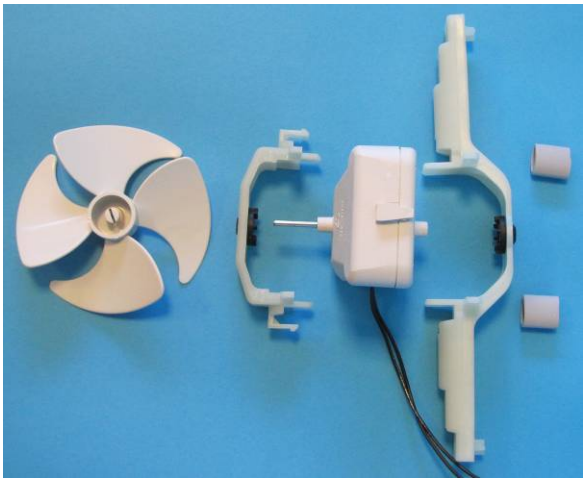


Fig. 5.3.5/ 2

5.3.6 Reed contact

Reed PCB for upper drawer

- Unclip the cover.
- Remove the reed PCB from the mount and disconnect it.

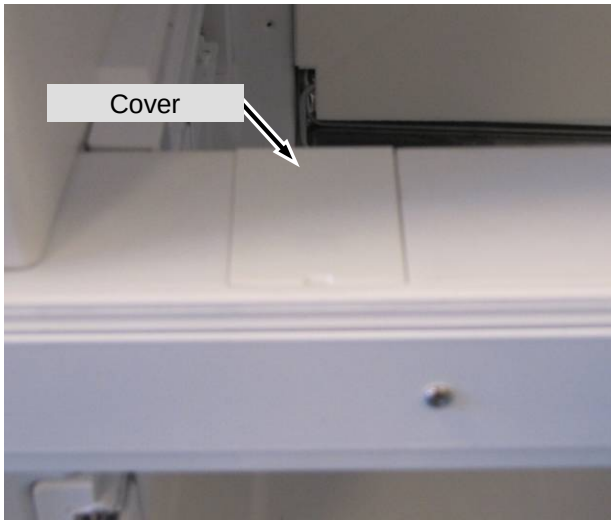


Fig. 5.3.6/ 1

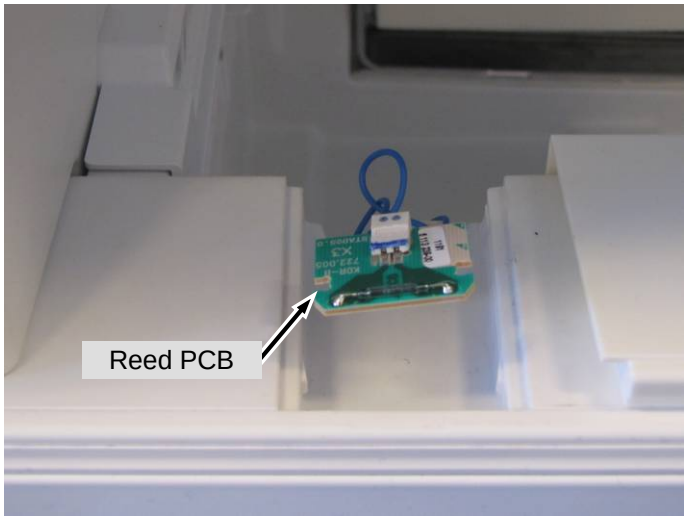


Fig. 5.3.6/ 2

Reed PCB for lower drawer - Unclip the cover.
- Remove the reed PCB from the mount and disconnect it.

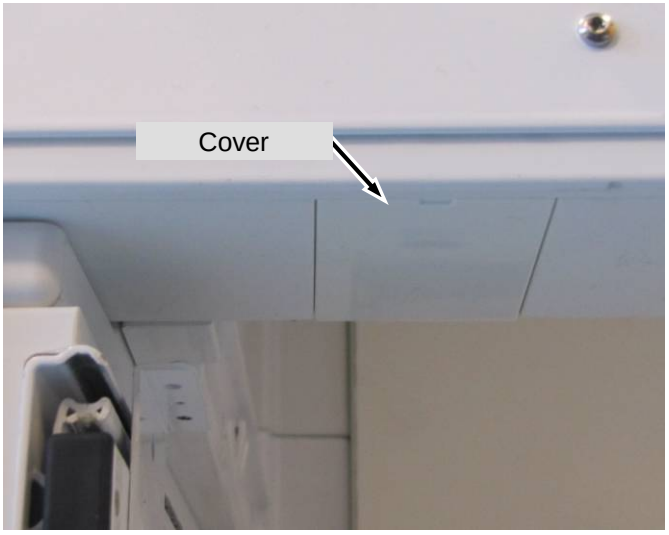


Fig. 5.3.6/ 3

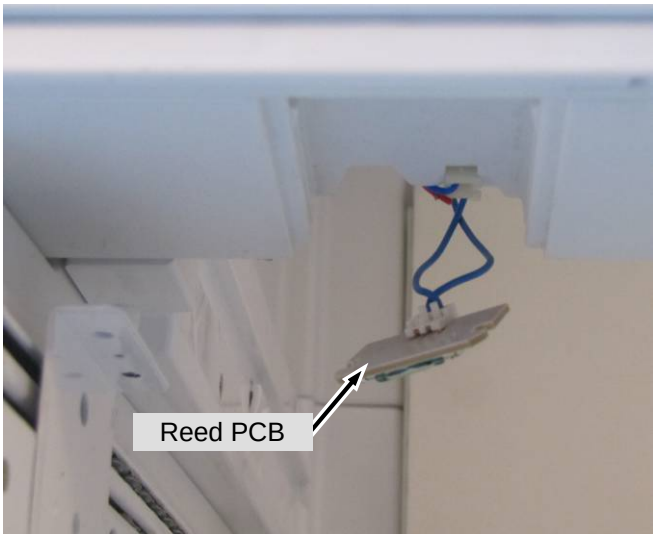


Fig. 5.3.6/ 4

Position of the magnets: - The magnets are foamed into the respective drawer.

Fig. 5.3.6/ 5

6.0 Technical data

6.1 General

Sensor values:

Temperature [°C]	Resistance value [kOhm]
+35	3.1
+30	3.8
+25	4.7
+20	5.9
+15	7.4
+10	9.4
+5	11.9
0	15.4
-5	19.9
-10	26.0
-15	34.3
-20	45.7
-25	61.4
-30	83.4
-35	114.5

6.2 Refrigerator compartment

Interior light	Wattage: Voltage:	2 x 2,86 watts approx.. 13 Voltlt/DC
Fan:	Wattage: Voltage:	1,1 watts 11 Volt/DC
Heating for hinge housing:	Wattage: Voltage:	2x approx. 6 watts 115 Volt/AC

6.3 Freezer compartment

Interior light	2 strips with 2 LEDs each: Wattage: Voltage: In total:	 4 x approx. 1.1 W approx. 18-20 V/DC, with connected LED lighting. 4.4 W
Fan:	Wattage: Voltage:	approx. 4,5 W 115 Volt/AC
Defrost heater:	Wattage: Voltage:	approx. 194 W 115 Volt/AC
Temperature fuse:	Tripping temperature:	+84°C (is defective after it has been tripped and has to be replaced)

7.0 Customer menu – permanent activation of the heater for the hinge housing

Customer menu activation: Press "**SuperFrost"** for approx. 5 seconds.

All the functions that can be set and activated by the customer (e.g. display brightness, child lock,...) are described in the operating instructions.

Permanent activation of the heater is not described in the operating instructions because of the energy consumption:

if, due to major condensate formation in the hinge housing, the heating should be permanently activated, state HI must be assigned a new heating activation period (HH):

- Press the SuperFrost symbol for 5 seconds -> customer menu open
- Press the Down symbol for the freezer compartment until H appears in the display
- Press the SuperFrost symbol -> H0 is indicated in the display
- Press the Up symbol for 5 seconds -> HH is indicated in the display
- Press the SuperFrost symbol
- Press the Up symbol for the freezer compartment until HI appears in the display
- Press the SuperFrost symbol
- Press the ON/OFF symbol for the freezer compartment -> customer menu closed

	New	Activation period for HI
HO	Permanently OFF	
HA	20" ON / 40" OFF	
HI	20" ON / 40" OFF	HL (as standard)
	Permanently ON	HH

The original heater activation period (HL) can be re-assigned to the HI state at a later stage (e.g. when the ambient humidity has returned to a lower level):

- Press the SuperFrost symbol for 5 seconds -> customer menu open
- Press the Down symbol for the freezer compartment until H appears in the display
- Press the SuperFrost symbol -> H0 is indicated in the display
- Press the Down symbol for 5 seconds -> HL is indicated in the display
- Press the SuperFrost symbol
- Press the ON/OFF symbol for the freezer compartment -> customer menu closed

8.0 Service menu

The service menu may be used by service technicians only.

Activation of service menu: Press "**Up**" + "**ON/OFF**" simultaneously for about 5 seconds (freezer compartment buttons)

Once the **service menu is activated, "MENU" flashes** in the display**.**

8.1 Manual defrosting H

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				SF = SuperFrost
1	Actual value	Press "**Up**" and "**ON/OFF**" simultaneously for 5 seconds	H flashes	Service menu active, Manual defrosting selected
2	H flashes	Press "SF" once	H I static	**Manual defrosting ON** selected
3	H I static	Press "SF" once	A static	**Manual defrosting ON** activated
Manual defrosting is ended by:		- Switching appliance OFF/ON - Automatic after the defrost parameters are reached		

8.2 Demo mode d

Step	Display	Operation	Display following operation	Testing option / Info
Start service menu -- Demo mode ON --				SF = SuperFrost
1	Actual value	Press "**Up**" and "**ON/OFF**" simultaneously for 5 seconds	H flashes	Service menu active
2	H flashes	Press "Up" once	d flashes	**Demo mode** selected
3	d flashes	Press "SF" once	d 1 static	**Demo mode ON** selected
4	d 1 static	Press "SF" once	Set value and "**Demo**"	**Demo mode ON**
Start service menu --Demo mode OFF--				SF = SuperFrost
1	Actual value and "**Demo**"	Press "**Up**" and "**ON/OFF**" simultaneously for 5 seconds	H flashes and "**Demo**"	Service menu active
2	H flashes	Press "Up" once	d flashes and "**Demo**"	**Demo mode** selected
3	d flashes and "**Demo**"	Press "SF" once	d0 static and "**Demo**"	**Demo mode OFF** selected
4	d0 static and "**Demo**"	Press "SF" once	Actual value	**Demo mode OFF**

The text "**Demo**" in the display informs of the **activated demo mode**.
Demo mode can be deactivated only via service menu, not by OFF/ON or disconnection from the supply.
Operation switches to the mode wanted, demo mode or normal mode, as soon as "SuperFrost" has been actuated.

8.3 Panel test

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				SF = SuperFrost
1	Actual value	Press "**Up**" and "**ON/OFF**" simultaneously for 5 seconds	H flashes	Service menu active
Panel test -- test of sensor buttons, display elements, door sensor and beep --				
2	H flashes	Press "Up" twice	P flashes	Panel test selected
3	P flashes	Press "SF" once	P 1 static	Panel test activated
4	P 1 static	Press "SF" once	All symbols/segments	All symbols/segments
5	All symbols/segments	Doors closed/open and press all buttons one after the other (each operation is confirmed by a beep)	- Beep for 2 sec. - appliance switches OFF	After the last button has been pressed a beep sounds for 2 seconds, only if the test has been successful.
End	Panel test cannot be ended in step 2, for example, it has to be performed in full. Should a **button/sensor be defective**, there will be **no 2-second beep** and the **appliance will not switch OFF**. The appliance then has to be unplugged and plugged back in again.			

8.4 Sensor test (display of temperature) and door contact test E-

8.4.1 Refrigerator/freezer compartment E1

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				SF = SuperFrost
1	Actual value	Press "**Up**" and "**ON/OFF**" simultaneously for 5 seconds	H flashes	Service menu active
Sensor test and door contact test (sensor values without offset, appliance in control mode)				
2	H flashes	Press "Up" three times	E- flashes	Sensor test mode selected
3	E- flashes	Press "SF" once	E1 static	Sensor test mode activated
4	E1 static	Press "SF" once	03 flashes alternately with sensor temperature	**Freezer compartment air sensor**
5	03 flashes alternately with sensor temperature	Press "Up" once	04 flashes alternately with sensor temperature	**Freezer compartment evaporator sensor**
6	04 flashes alternately with sensor temperature	Press "Up" once	01 flashes alternately with sensor temperature	**Refrigerator compartment air sensor**
7	01 flashes alternately with sensor temperature	Press "Up" once	02 flashes alternately with sensor temperature	**Refrigerator compartment evaporator sensor**
8	02 flashes alternately with sensor temperature	Press "Up" once	0A flashes alternately with oP or cL	**Refrigerator compartment door contact** (cL=door closed, oP=door open)
9	0A flashes alternately with sensor temperature	Press "Up" once	06 flashes alternately with oP or cL	**Freezer compartment door contact** (cL=door closed, oP=door open)
End	Press "**ON/OFF**" once: Return to level 2 E1 . No further points selectable with this appliance. Press "**ON/OFF**" twice: Return to level 1 E- . Points: d,P , E- , L- selectable Press "**ON/OFF**" three times: Return to normal/control mode			

8.4.2 IceMaker

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				SF = SuperFrost
1	Actual value	Press "**Up**" and "**ON/OFF**" simultaneously for 5 seconds	H flashes	Service menu active
Sensor test and door contact test (sensor values without offset, appliance in control mode)				
2	H flashes	Press "Up" three times	E- flashes	**Sensor test mode** selected
3	E- flashes	Press "SF" once	E1 static	**Sensor test mode activated**
4	E1 static	Press "Up" once	EF static	**IceMaker selected**
6 → 5	EF static	Press "SF" once	F1 flashes alternately with sensor temperature	**IceMaker air sensor**
5 ← 6	F1 flashes alternately with sensor temperature	Press "Up" once	FA flashes alternately with oP or cL	**Ice-cube drawer door contact** (oP=door open, cL=door closed)
End	Press "**ON/OFF**" once: Return to level 2 EF . No further points selectable with this appliance. Press "**ON/OFF**" twice: Return to level 1 E- . Points: d, P, E-, L selectable Press "**ON/OFF**" three times: Return to normal/control mode			

8.4.3 Water tank

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				SF = SuperFrost
1	Actual value	Hold down "**Up**" and "**On/Off**" together for 5 seconds	H flashes	Service menu active
Sensor test and door contact test (sensor values without offset, appliance in control mode)				
2	H flashes	Press "Up" three times	E- flashes	**Sensor test mode** selected
3	E- flashes	Press "SF" once	E1 static	**Sensor test mode activated**
4	E1 static	Press "Up" twice	En static	**Water tank selected**
5	En static	Press "SF" once	nA flashes alternately between oP or cL	**Reed contact-water level** (oP=empty, cL=full)
End	Press "**On/Off" once**: Return to level 2 . No[illegible]ther items selectable with this appliance. Press "**On/Off**" twice: Return to level 1 . Po[illegible]s: , , d, P, E-[illegible]ectable Press "**On/Off**" three times: Return to normal/control mode			

8.5 Service mode

8.5.1 Refrigerator/freezer compartment

Step	Display	Operation	Display following operation	Testing option / Info	
Service menu start				SF = SuperFrost	
1	Actual value	Press "**Up**" and "**ON/OFF**" simultaneously for 5 sec.	flashes	Service menu active	
Service mode -- testing electric loads--					**Power input**
2	flashes	Press "Up" four times	flashes	Service mode selected	---
3	flashes	Press "SF" once	static	Service mode activated	---
4	static	Press "SF" once	static	**All OFF**	approx. 4 W
15→5	static	Press "Up" once	static	**Freezer compartment compressor ON**	n/a
6	static	Press "Up" once	static	**Refrigerator compartment compressor ON**	n/a
7	static	Press "Up" once	static	**Freezer compartment fan ON**	approx. 4.5 W
8	static	Press "Up" once	static	**Freezer compartment defrost heater ON**	approx. 194 W
9	static	Press "Up" once	static	**Refrigerator compartment light ON**	approx. 19 W
10	static	Press "Up" once	static	**Refrigerator compartment fan slow**	approx. 6 W
11	static	Press "Up" once	static	**Refrigerator compartment fan fast**	approx. 7 W
12	static	Press "Up" once	static	**Freezer compartment light ON**	approx. 8.5 W
13	static	Press "Up" once	static	**Condenser fan ON**	approx. 4.5 W
14	static	Press "Up" once	static	**Heater hinge housing ON**	approx. 12 W
5 ←15	static	Press "Up" once	static	**Return to step 5**	---
End	Press "**ON/OFF**" once: Return to level 2 . Points: , , , selectable Press "**ON/OFF**" twice: Return to normal/control mode				

8.5.2 IceMaker

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				SF = SuperFrost
1	Actual value	Press "**Up**" and "**ON/OFF**" simultaneously for 5 seconds	H flashes	Service menu active
Service mode -- testing electric loads--				
2	H flashes	Press "Up" four times	L flashes	**Service mode** selected
3	L flashes	Press "SF" once	L' static	**Service mode activated**
4	L' static	Press "Up" once	L⌐ static	**IceMaker selected**
5	L⌐ static	Press "SF" once	⌐0 static	**All OFF**
12 → 6	⌐0 static	Press "Up" once	⌐2 flashes alternately with -0	**All OFF**
7	⌐2 flashes alternately with -0	Press "SF" once	⌐2 flashes alternately with -1	**- ice cube tray emptied and returns to home position** **- 3 sec. water pump ON***) ***Drawer can remain open!***
8	⌐2 flashes alternately with -1	Press IceMaker 1x "On/Off"	⌐2 flashes alternately with -0	**All OFF**
9	⌐2 flashes alternately with -0	Press "Up" once	⌐3 flashes alternately with -0	**All OFF**
10	⌐3 flashes alternately with -0	Press "SF" once	⌐3 flashes alternately with -1 → -0	**- ice cube tray emptied and remains in eject position** **- 25 sec. water pump ON***) ***Drawer must be closed!*** After 25 seconds have elapsed, ⌐3 again flashes alternately with -0
11	⌐3 flashes alternately with -0	- Press IceMaker ON/OFF button (→ switch ON) - Close drawer	⌐3 flashes alternately with -0	**IceMaker switches on and ice cube tray returns to home position**
6 ← 12	⌐3 flashes alternately with -0	Press "Up" once	⌐0 static	**Return to step 6**
End	Press "**ON/OFF**" once: Return to level 2: L⌐ Items: L' L⌐ L∩ selectable Press "**ON/OFF**" twice: Return to normal/control mode			

***) Water pump only runs when the water tank is filling up.**

8.5.3 Water tank pump

Step	Display	Operation	Display following operation	Testing option / Info
Service menu start				SF = SuperFrost
1	Actual value	Press "**Up**" and "**ON/OFF**" simultaneously for 5 seconds	flashes	Service menu active
Service mode -- testing electric loads--				
2	flashes	Press "Up" four times	flashes	**Service mode** selected
3	flashes	Press "SF" once	static	**Service mode activated**
4	static	Press "Up" once	static	**IceMaker selected**
5	static	Press "Up" once	static	**Water tank pump selected**
6	static	Press "SF" once		**All OFF**
9 → 7	static	Press "Up" once	flashes alternately with	**All OFF**
8	flashes alternately with	Press "SF" once	flashes alternately with →	**-Water tank pump ON for 10 seconds** After the 10 seconds have elapsed, flashes alternately with
7 ← 9	flashes alternately with	Press "Up" once	static	**Return to step 7**
End	Press "**ON/OFF**" once: Return to level 2 : Items: , , selectable Press "**ON/OFF**" twice: Return to normal/control mode			

9.0 Error code table

Error code	Defective component	Emergency mode
F1	Refrigerator compartment air sensor	Compressor 10 minutes ON and 30 minutes OFF.
F2	Refrigerator compartment evaporator sensor	Compressor 10 minutes ON and 30 minutes OFF.
F3	Freezer compartment air sensor	Compressor continuous operation
F4	Freezer compartment evaporator sensor	Compressor continuous operation
FE	IceMaker sensor	